

What is claimed is:

1. An optical semiconductor device, comprising:

an optical semiconductor element having a circuit portion including any one of a light-receiving element and a light-emitting element on a surface thereof;

a terminal portion which is provided on a back of the optical semiconductor element and electrically connected with the circuit portion;

a covering layer which covers the surface of the optical semiconductor element and is made of a transparent material; and

sealing resin which covers side surfaces of the optical semiconductor element.

2. The device of claim 1, wherein the back surface of the optical semiconductor element is covered with the sealing resin, and the terminal portion is exposed from the sealing resin.

3. The device of claim 1, wherein the back surface of the optical semiconductor element is covered with an insulating layer, and the terminal portion is formed on a back of the insulating layer.

4. The device of claim 1, wherein the circuit portion of the optical semiconductor element and the terminal portion are electrically connected by a penetrating electrode provided in the optical semiconductor element.

5. The device of claim 1, wherein the circuit portion of the optical semiconductor element and the terminal portion are connected through a rewiring pattern elongating along a side surface portion of the optical semiconductor element, and the rewiring pattern is covered with the sealing resin.

6. The device of claim 1, wherein a bump electrode is formed on a back of the terminal portion.

7. The device of claim 1, wherein each of the side surfaces of the optical semiconductor element is formed to be an inclined surface.

8. The device of claim 1, wherein side surfaces of the covering layer is covered with the sealing resin.

9. A method of manufacturing an optical semiconductor device, comprising:

preparing a wafer having a plurality of circuit portions each including any one of a light-receiving element and a light-emitting element on a surface thereof;

separating the wafer into individual optical semiconductor elements by forming separating grooves from a back surface of the wafer so that the wafer is separated;

providing terminal portions electrically connected with the circuit portions on back surface of the optical semiconductor

elements;

forming sealing resin so that at least the separating grooves are filled with the sealing resin; and

separating individual optical semiconductor devices from each other along the separating grooves.

10. The method of claim 9, further comprising the step of adhering a transparent covering layer onto the surface of the wafer so that the circuit portions are covered with the covering layer.

11. The method of claim 10, wherein after the wafer with a covering layer facing down is adhered onto a sheet, the separating grooves are formed.

12. The method of claim 10, wherein the separating grooves are formed so that both the wafer and the covering layer are divided, and side surfaces of the optical semiconductor elements and divided portions of the covering layer are covered with the sealing resin with which the separating grooves are filled.

13. The method of claim 9, wherein the separating grooves are formed so that the covering layer is partly divided, and side surfaces of the optical semiconductor elements and of partly divided portions of the covering layer are covered with the sealing resin with which the separating grooves are filled.

14. The method of claim 9, wherein the circuit portions of the

optical semiconductor elements and the terminal portions are electrically connected by penetrating electrodes provided in the optical semiconductor elements.

15. The method of claim 9, wherein the circuit portions of the optical semiconductor elements and the terminal portions are connected through rewiring patterns elongating along side surface portions of the optical semiconductor elements, and the rewiring patterns are covered with the sealing resin.

16. The method of claim 15, wherein the rewiring patterns are formed on the side surface portions, each side surface portion being formed to be an inclined surface.

17. The method of claim 9, wherein the sealing resin is formed to cover the terminal portions and the back of the wafer, and the terminal portions are exposed by abrading the sealing resin.